

### **REMARKS**

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks.

The applicants have amended Claims 1 and 19; support language for the amendment includes paragraph [0019] of the specification. Additional, new Claim 35 has been added.

Therefore Claims 1-5, 7, 9-12, 14-20, 22, 24-26, 28 and 30-35 are currently pending in the application.

**I. Rejection of Claims 1-3, 5, 10-12, 14, 16-20, 25, 26, 28, 30, 33 and 34 under 35 U.S.C. §102**

The Examiner has rejected Claims 1-3, 5, 10-12, 14, 16-20, 25, 26, 28, 30, 33 and 34 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Publication No. 2002/0098627 Pomarede *et al.*, ("Pomarede").

Independent Claims 1, 19 and new Claim 35 recite among other things, pre-heating the surface, wherein contaminants are formed on the surface. Claims 1 and 35 further recite exposing the surface to a nitrogen-containing gas at a temperature of between about 500°C and 800°C to remove the contaminants from the surface.

Pomarede as applied by the Examiner does not teach or suggest a surface pre-heating step, wherein contaminants are formed on the surface.

In contrast, Pomarede discloses an excited species treatment and subsequent ALD on an already-cleaned substrate (Pomarede, paragraphs [0062] and [0063]). Rather, than disclosing the

removal of contaminants, Pomarede reveals that his excited species treatment is carefully tuned to break surface bonds such as hydrogen-silicon bonds and Si-Si bonds, and to form new ones. The excited species treatment is done in preparation for his subsequent gate dielectric deposition by ALD at temperatures from room temperature to 700°C (Paragraph [0063]).

Additionally, Pomarede's inclusion of a nitrogen source gas appears to be an alternative embodiment of his excited species treatment because Pomarede discloses that nitrogen is supplied to break surface bonds (Paragraph [0066]). As such, there is also no teaching or suggestion by Pomarede of exposing the surface to a nitrogen-containing gas at a temperature of between about 500°C and 800°C to remove the contaminants from the surface.

Therefore, Pomarede does not disclose each and every element of the claimed invention and as such, are not anticipating references of Claims 1, 19 and 35 and claims dependent thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

## **II. Rejection of Claims 4, 7, 9, 15, 22, 24 and 31-32 under 35 U.S.C. § 103**

Claim 4 is rejected under 35 U.S.C. § 103 as unpatentable over Pomarede in view of U.S. Patent No. 6,350,322 to Yates (Yates). Claims 7, 9, 15, 22, 24 and 31-32 are rejected under 35 U.S.C. § 103 as being unpatentable over Pomarede.

The Applicants disagree because as argued above Pomarede fails to teach or suggest all of the elements of Claims 1 and 19, namely a surface pre-heating step, wherein contaminants are formed on the surface. Moreover Yates as applied by the Examiner does not remedy the deficit teachings

of Pomerade, in as much the Examiner does not apply Yates for the proposition of teaching or suggesting this element.

In view of the foregoing remarks, the cited references do not support the rejection of Claims 4, 7, 9, 15, 22, 24 and 31-32 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner to withdraw these rejections.

### **III. Conclusion**

For the foregoing reasons, applicant respectfully submits that the foregoing claims, as amended, are allowable. Therefore, a timely Notice of Allowance for Claims 1-5, 7, 9-12, 14-20, 22, 24-26, 28 and 30-34 is respectfully requested.

Should it facilitate allowance of the application, the Examiner is invited to telephone the undersigned attorney. The Commissioner is hereby authorized to charge any additional payment that may be due or credit any overpayment to Deposit Account No. 08-2395.

Respectfully submitted,

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A handwritten signature in dark ink, appearing to read "Charles W. Gaines", is written over a horizontal line.

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